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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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Bachman & LaPointe
Suite 1201
900 Chapel Street
New Haven, CT 06510-2802

EXAMINER

SOLIS, ERICK R

ART UNIT

PAPER NUMBER

3747

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/009,006 | Applicant(s) HENLE, JORG | |
| | Examiner Erick R Solis | Art Unit 3747 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

This office action is in response to the appeal brief filed on 1 December 2004.

Applicant's arguments have been considered. In light of newly discovered art (Damotte US 6128554 and Fernandez US 5489830) which teach that the use of force sensors in aircraft controls is well known, the grounds for rejection have changed. The finality of the prior office action is withdrawn. A new office action follows below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (GB 2 114 717) in view of Damotte (US Patent No. 6128554). Hill et al disclose a throttle lever for an aircraft engine (see Fig. 7 or 8). The throttle may be controlled by a stepper motor (31) or may be overridable by manual movement of the lever (35). Hill et al also teach a position sensor (33). Hill et al teach at pg. 7, lines 30-50, that a change in direction of the lever is sensed by detecting a change in direction of the position encoder signal. Hill et al, however do not teach the use of a force sensor on the control to detect an operator acting on it. Damotte teaches an aircraft having a controlled member (6) controlled by an operator of the aircraft via a stick (2). The stick includes a force sensor (18) which detects the operator's intent to control the aircraft. It

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would have been obvious to one of ordinary skill in the art to have included a force sensor in Hill et al control system since detection of a force on the throttle lever would have given the computer control and indication that the operator intended to adjust the throttle and would have allowed the stepper motor to assist the operator in adjusting the throttle.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (GB 2 114 717) in view of Senjo et al. Hill et al disclose a throttle lever for an aircraft engine (see Fig. 7 or 8). The throttle may be controlled by a stepper motor (31) or may be overridable by manual movement of the lever (35). Hill et al also teach a position sensor (33). Hill et al teach at pg. 7, lines 30-50, that a change in direction of the lever is sensed by detecting a change in direction of the position encoder signal. Hill et al teach the use of a ball screw which allows the lever to move in a linear direction as the ball screw turns and vice versa. Hill et al, however do not disclose the use of a trapezoidal screw. Senjo et al teach that a trapezoidal screw may be substituted for a ball screw (see col. 9, line 37). It would have been obvious to one of ordinary skill in the art to modify Hill et al's control apparatus such that a trapezoidal threaded screw was used instead of a ball screw since both of these types of screws have low friction coefficients which would allow for ease of movement of the lever (35). The positioning of the various sensors is considered to be an obvious matter of design choice.

3. Claims 1-3 and 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (GB 2 114 717) in view of Damotte (US Patent No. 6128554) and further

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in view of Senjo et al. Hill et al disclose a throttle lever for an aircraft engine (see Fig. 7 or 8). The throttle may be controlled by a stepper motor (31) or may be overridable by manual movement of the lever (35). Hill et al also teach a position sensor (33). Hill et al teach at pg. 7, lines 30-50, that a change in direction of the lever is sensed by detecting a change in direction of the position encoder signal. Hill et al, however do not teach the use of a force sensor on the control to detect an operator acting on it.

Damotte teaches an aircraft having a controlled member (6) controlled by an operator of the aircraft via a stick (2). The stick includes a force sensor (18) which detects the operator's intent to control the aircraft. It would have been obvious to one of ordinary skill in the art to have included a force sensor in Hill et al control system since detection of a force on the throttle lever would have given the computer control and indication that the operator intended to adjust the throttle and would have allowed the stepper motor to assist the operator in adjusting the throttle.

Hill et al teach the use of a ball screw which allows the lever to move in a linear direction as the ball screw turns and vice versa. Hill et al, however do not disclose the use of a trapezoidal screw. Senjo et al teach that a trapezoidal screw may be substituted for a ball screw (see col. 9, line 37). It would have been obvious to one of ordinary skill in the art to modify Hill et al's control apparatus such that a trapezoidal threaded screw was used instead of a ball screw since both of these types of screws have low friction coefficients which would allow for ease of movement of the lever (35). The positioning of the various sensors is considered to be an obvious matter of design choice.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erick R. Solis whose telephone number is (703) 308-2651. The examiner can normally be reached on Monday-Thursday.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

A handwritten signature in black ink, appearing to read "Erick R. Solis". The signature is written in a cursive, flowing style.

Erick R. Solis
Primary Examiner
Art Unit 3747

ers
February 22, 2005